

Lesson 4

Sources of Routinely Collected Data for Surveillance



Objectives for Lesson 4

- Describe notifiable disease and reporting mechanisms
- Describe vital statistics
- Define and describe sentinel surveillance
- Describe uses of surveys
- Describe registries



Objectives for Lesson 4 (continued)

- Describe surveys
- Differentiate between surveys and registries
- Describe types of administrative data-collection systems



Types of Surveillance

- Selected individuals report
- Passive: initiated by provider
- Active: initiated by the health department
- Sentinel



Limitations of Reporting Systems

- Under reporting
- Incomplete reporting

** If consistent surveillance methods are used, data will describe trends despite under reporting*



Factors Contributing to Incomplete Reporting

- Concealment due to social stigma
- Lack of awareness of requirements
- Inadequate knowledge of case definitions
- Changes in procedures
- Variations in diagnosis skills
- Low priority



Strengths of Reporting System

- Quick information
- Detect changes in patterns
- Detection of outbreaks
- Availability of information from all jurisdictions
- Basis for prevention recommendations



Potential Changes in Notifiable Disease Reporting

Increased:

Reliance on laboratory-based reporting

Use of sentinel health care providers

Use of sentinel sites

Use of computerized data bases



Vital Statistics

- Only health related data available in many countries in a standard format
- Often the only source available for estimating rates for small geographical areas



Uses of Vital Statistics

- Identify differences in health status within groups
- Assess differences by geographic area or occupation
- Monitor deaths considered to be preventable
- Generate hypotheses regarding possible cause/correlates of disease
- Conduct health planning activities
- Monitor progress towards health goals



Birth Certificates

- Responsibility of states in U.S.
- Adoption of standard certificates encouraged
- Usually filed within 24 hours
- Includes date, time, and additional information



Death Certificate Information

- Cause of death
- Interval between onset of condition and death
- Other important medical conditions
- Manner of death
- Whether an autopsy was performed
- Whether medical examiner/coroner was notified



ICD-9

A tabular list of categories and conditions including:

- code numbers
- definitions of key terms
- rules for selecting underlying causes of death
- lists of conditions for statistical summaries

Useful for:

- classifying conditions
- calculating rates



Issues in comparability and quality control

- Factors influencing quality of vital statistics
- Factors influencing comparability of vital statistics
- Population estimates
- Population undercounts
- Comparison of cause-specific rates
- Impact of use of certain ICD codes



Surveillance Systems Based on Vital Statistics

- Weekly reports (some)
- Monthly or quarterly reports
- Infant mortality and other adverse reproductive outcomes
- Occupational mortality
- Additional sources



Sentinel Surveillance

- Encompasses a wide range of activities focused on monitoring key health indicators in general or in special populations



Sentinel refers to

- Key health events
- Clinics or other sites at which health events are monitored
- Reporters who report specific health events



Sentinel Sites

- Hospitals
- Clinics
- Counties



Role of Sentinel Sites

- Monitor conditions for which information is not otherwise available
- Monitor conditions in subgroups which are more vulnerable than general population



Sentinel Providers

- Report surveillance data
- Higher quality data
- Can be used to calculate or estimate disease morbidity



Uses for Registries

- Monitor chronic disease
- Link information from multiple sources over time
- Collect data systematically
- Identify opportunities for disease control and prevention



Types of Registries

- Case series and hospital-based
- Population-based
- Exposure



Surveys

- Provide information for assessing prevalence of health conditions and risk
- Monitor changes in prevalence over time
- Assess knowledge, attitudes, and practices



Differences Between Survey and Registry

- Individuals usually queried only once in a survey
- Data obtained by interview in a survey
- Surveyed population is generally representative of source population



Types of Surveys

Health Interview Surveys

NHIS, GHS, BRFSS, YRBS

Provider-based Surveys

NHDS, NAMCS, NDTI

Other Surveys

NSFG, NHANES



Administrative Data Collection Systems

- Availability and usefulness
- Integrated health information systems
- Hospital discharge data systems
- Emergency room data collection
- Ambulatory care data



Data Collection Systems

- Home Accident Surveillance System (HASS)
- European Home and Leisure Accident Surveillance System (EHLASS)
- National Electronic Injury Surveillance System (NEISS)
- Drug Abuse Warning Network (DAWN)
- Poison control centers, burn units, trauma registries

